

Enterprise-Class Virtualization and Management

Virtual Iron Software

Organizations have made significant investments in the data center, but the infrastructure remains complex and inefficient. As a result, it is difficult and expensive to manage. In addition, enterprise IT departments are not able to respond as effectively to the needs of the business as they would like. While server virtualization delivers capabilities that address many data center shortcomings, existing solutions are proprietary, expensive, and slow to respond to industry innovation.

Virtual Iron Software delivers enterprise-class software solutions for server virtualization and virtual infrastructure management. These products enable organizations to transform their physical server, storage, and network resources into a centrally managed pool for creating and managing virtual infrastructure in the data center. As a result, users can significantly reduce the cost and complexity of enterprise service delivery. Virtual Iron also takes full advantage of industry standards and open source technologies to dramatically change the economics of virtualization — delivering comprehensive solutions for virtualization and management for just a fraction of the cost of comparable competitive offerings.

With Virtual Iron, users can:

- Improve the utilization of current systems and get more out of today's industry-standard hardware via partitioning and consolidation.
- Quickly and economically deploy software to set up development, test, staging and production environments.
- Match resource capacity to workload demands via capacity management capabilities.
- Recover from failures quickly, reliably and cost-efficiently via high availability and disaster recovery capabilities.
- Reduce human labor and errors via policy-based automation.

Virtual Iron also partners with the major processor, platform and operating system vendors including AMD, HP, IBM, Intel, Novell and Sun to deliver comprehensive, industry-standard data center solutions.

THE VIRTUAL IRON DIFFERENCE

Virtual Iron's enterprise-class virtualization solutions provide centralized, policy-based virtualization management for a shared pool of dynamic server, storage and network resources. The software delivers advanced virtualization capabilities that set Virtual Iron apart from other offerings in the market:

- **Native Virtualization** — Virtual Iron's approach to virtualization is efficient, easy to manage and based on open source virtualization. The software dramatically streamlines virtual infrastructure management and reduces operational costs by:
 - Leveraging hardware-assisted virtualization capabilities from Intel and AMD for optimal virtualization efficiency.
 - Allowing 32- and 64-bit x86 Linux and Windows operating systems to run unmodified and concurrently on a partitioned server.
 - Requiring no installation or management of the virtualization layer.
 - Virtualizing all data center resources including servers, networks, and storage.

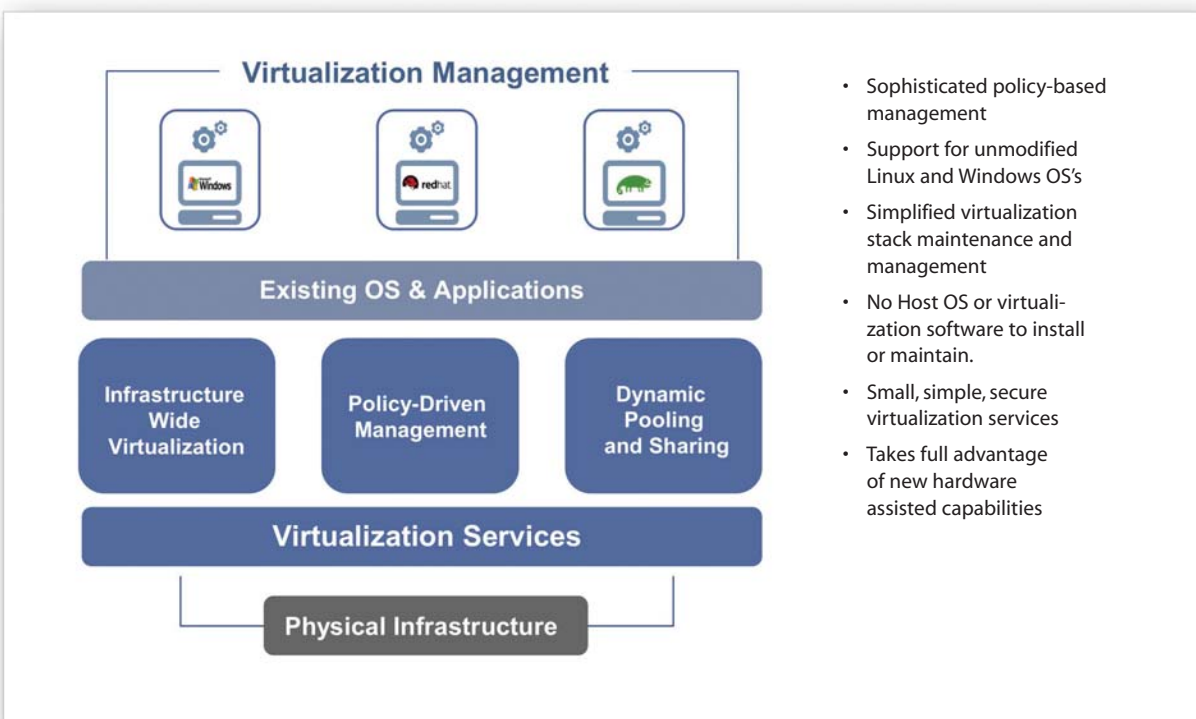
- **Policy-Driven Management** — Virtual Iron's unique, policy-driven automation simplifies the management of computing resources and enables rapid provisioning and deployment without increased administrative overhead. Features like LiveMigrate™, LiveCapacity™, LiveMaintenance™, and LiveRecovery™ enable automated and dynamic resource management. With it, users can:

- Integrate with third-party monitoring applications to control virtual infrastructure.
- Run reports to see historical views of resource load or activity.
- Create custom policies that automate data center operations.

- **Price/Performance Leadership** — Open source economics and efficient use of physical resources provide dramatic cost reductions. Hardware-assisted virtualization minimizes overhead to provide virtualization benefits to the broadest range of applications.

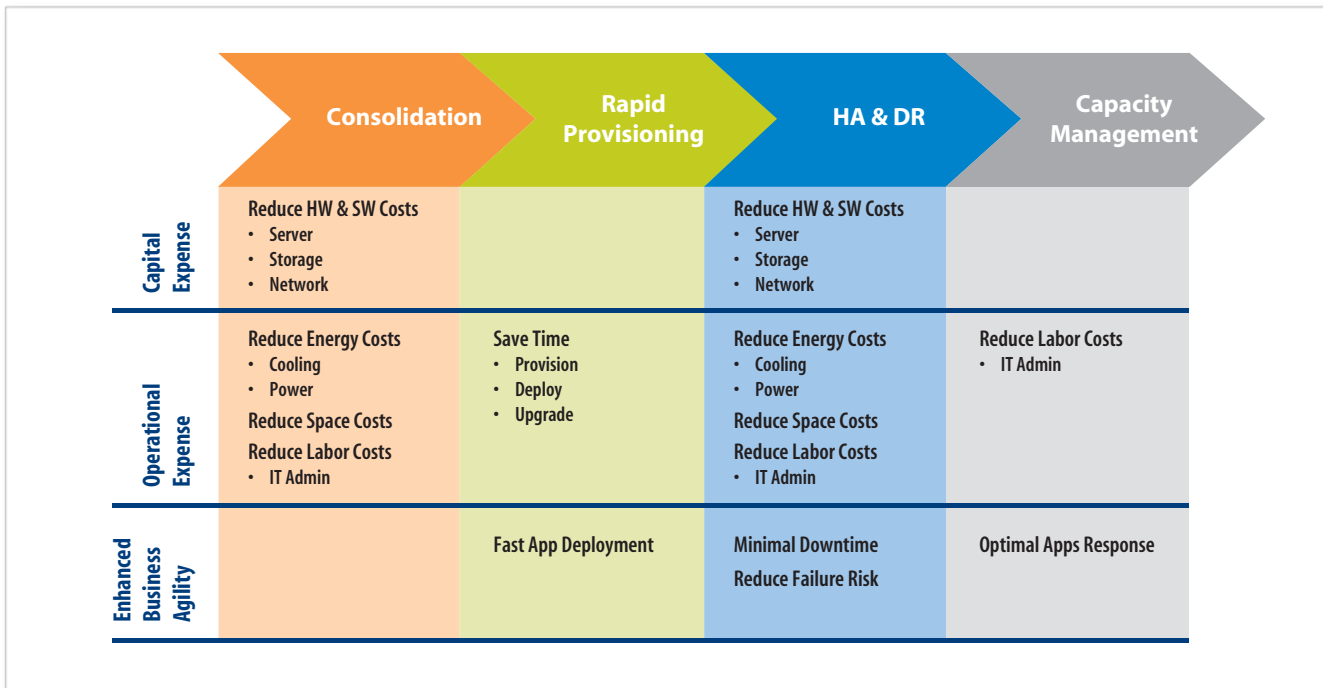
These capabilities allow users to optimize physical and people resources by transforming the data center into an efficient pool of shared computing resources that are dynamically configured and managed via software; allowing users to run any application, anywhere, at any time.

A COMPREHENSIVE SOLUTION FOR VIRTUALIZATION AND MANAGEMENT



- Sophisticated policy-based management
- Support for unmodified Linux and Windows OS's
- Simplified virtualization stack maintenance and management
- No Host OS or virtualization software to install or maintain.
- Small, simple, secure virtualization services
- Takes full advantage of new hardware assisted capabilities

TARGETING HIGH ROI APPLICATIONS FOR VIRTUALIZATION



Virtual Iron is designed to address a broad range of data center initiatives to reduce capital and operational expense and streamline data center management.

Server Consolidation

The unimpeded growth of data centers and the popularity of distributed applications has resulted in a proliferation of servers, storage systems, and operating systems. Most of these applications are on isolated, single-function physical servers that are over-sized and under-utilized.

Virtual Iron streamlines and automates server consolidation and reduces complexity throughout the data center. The software creates an optimized "virtual" data center that provides dynamic infrastructure built on industry standards and is flexible to changing business needs. The Virtual Iron platform allows a physical server of any size (from a single CPU to a 32-way multi-processor) to be partitioned into multiple virtual servers that work identically to a physical server. Each virtual server can expand as demand dictates by allocating capacity that is available on the physical server. With this capability, Virtual Iron delivers:

- A virtual computing platform that supports many multiple virtual servers running concurrently, and multiple workloads per physical server; and adapts in real-time by delivering capacity based on the resource demands of the applications.
- Efficient virtualization with minimal performance overhead.

- Comprehensive policy-based management of virtual infrastructure capable of handling a wide range of applications and workloads.
- Reduced risk of performance drag due to automated capacity management.
- Up to 10X improvement in resource utilization.

Rapid Provisioning

IT organizations are under immense pressure to provision, install and deploy software environments quickly and efficiently. Making matters worse, the number of software environments that need to be supported has exploded due to all the permutations of hardware, application servers, firewalls, browsers, and databases.

With Virtual Iron, users can quickly and economically set up development, test, staging and production environments using Virtual Iron's rapid provisioning and image management capabilities. Software environments can be deployed in minutes and repetitive configuration tasks are eliminated. Users are able to:

- Rapidly provision and deploy software reference stacks to create standardized environments for development, test and production.
- Quickly and easily stage an existing application on a new physical server, when that application outgrows its current physical server, or when the current physical server fails.

- Coordinate configurations and footprints between development, test, staging and production environments by cloning installed systems and copying software images.
- Roll back to previous known environments.
- Move virtual servers around live with their operating systems to deliver needed capacity and accommodate maintenance windows outside of normal timeframes.
- Remove hardware restrictions; allow teams to use physical hardware that does not need to be identical across development, QA and production.

Business Continuity

Enterprises are making large investments in infrastructure to ensure that applications are always available for their business users and customers. They require fail-proof solutions for high availability when localized software or equipment fails and disaster recovery when a data center is faced with catastrophic events. Existing approaches like high-availability clustering and failover software are meeting the need for business continuity, but major challenges remain such as the significant expense for idle hardware and software and specialized disaster recovery software and services. The management of these environments has also become extremely complex.

Virtual Iron enables users to deliver business continuity in a more efficient, cost-effective manner by:

- Increasing business-critical application uptime for any application.
- Building a variety of flexible and inexpensive high availability and disaster recovery solutions with less hardware.
- Reducing scheduled downtime.
- Streamlining and automating recovery processes.
- Using reliable and repeatable processes for implementing high availability and disaster recovery solutions.

Capacity Management

Virtual infrastructure provides a layer of abstraction between the computing, storage and networking hardware and the application layer, but not without management challenges. There are inefficiencies in managing and orchestrating a large number of virtual servers and a lack of effective management tools for matching capacity with business demands and automating service levels. In addition, the operational time and expense required to administer and reconfigure virtual infrastructure often outweighs the benefits of virtualization.

Virtual Iron provides a comprehensive management environment and policy-engine to automate the management of shared processing, storage and networking resources. Resources can be allocated and de-allocated on the fly to applications when needed based on business rules. Unique policy-driven automation capabilities enable rapid reconfiguration and capacity on demand without increased administrative overhead. Virtual Iron's capacity management capabilities enable users to:

- Use policies to automatically deliver resources when and where needed, so that performance is maintained regardless of usage spikes.
- Respond more quickly to changes in capacity demand with automated reconfiguration.
- Automatically maintain application availability and service levels using policies.
- Trigger reconfigurations based on rules that detect exceeded user-set performance thresholds.
- Migrate servers and adjust resource allocations "on-the-fly" without impacting running applications.

Virtual Iron delivers enterprise-class virtualization and management software solutions designed to address today's most challenging data center challenges. The software is changing the economics of virtualization by leveraging industry standards and open source technologies to support enterprise business applications and operating systems without modification.

To find out how Virtual Iron can help your company increase the ROI of your virtualization initiatives, please visit www.virtualiron.com or call us at 978.849.1200.

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